III. CLAIM AMENDMENTS

1. (Currently Amended) A method of ~~determination of~~ determining optical properties of a device under test in ~~both~~two directions in transmission and in reflection, comprising ~~the steps of~~:

splitting an initial measurement signal into at least a first and second measurement signal;

~~distinguishably coding at least two parts of a provided measurement signal,~~ coding the first measurement signal with a first code and the second measurement signal with a second code;

feeding the ~~at least two parts into the device under test from both directions,~~ first coded measurement signal into the device under test in one direction and the second coded measurement signal in another direction;

receiving ~~the signals from both directions transmitted and reflected by the device under test,~~ a signal including a reflected signal from the device under test in response to the first coded measurement signal and a transmitted signal from the device under test in response to the second coded measurement signal; and

~~identifying at least the coded parts in the signals transmitted and reflected by the device under test,~~

~~analyzing at least the identified parts to determine at least one optical property of the device under test from both directions in transmission and in reflection~~ detecting the reflected and transmitted signals.

2. - 6. (Cancelled)

7. (Currently Amended) The method of claim 1, further comprising:

~~providing~~ deriving a first and second reference signal ~~for the signal transmitted by the device under test and/or providing a reference signal for the signal reflected by the device under test, for at least one of both directions,~~

~~distinguishable coding the provided reference signal by spectral coding the reference signal~~from the first and second coded measurement signals, respectively; and

superimposing the first and second reference signals on the reflected and transmitted signals, respectively.

8. (Currently Amended) A software program or product, preferably stored on a data carrier, for executing the method of ~~one of the claims~~claim 1 when run on a data processing system such as a computer.

9. (Currently Amended) A measurement setup for determination of optical properties of a device under test in both directions in transmission and in reflection, comprising:

a device for splitting a measurement signal into at least a first and second measurement signal;

~~a~~ coding ~~device distinguishable~~devices for coding ~~at least two parts of a provided~~ the first measurement signal with a first code and a second measurement device with a second code~~,~~;

feeding elements feeding the ~~at least two parts~~ first measurement signal into the device under test from ~~both directions in transmission and in reflection,~~one direction and the second coded measurement signal in another direction; and

receiving elements for receiving ~~the signals from both directions transmitted and reflected by the device under test, identifying at least the coded parts in the signals transmitted and reflected by the device under test, and~~

~~analyzing at least the identified parts to determine at least one optical property of the device under test from both directions in transmission and in reflection~~ a signal including a reflected signal from the device under test in response to the first coded measurement signal and a transmitted signal from the device under test in response to the second coded measurement signal, and for detecting the reflected and transmitted signals ~~.~~

10. (Currently Amended) The setup of claim 9,

wherein the coding device further comprises a switch sequentially feeding one part of the measurement signal into a first path entering the device under test from the one direction and the other part of the measurement signal into a second path entering the device under test from the other direction.

11. (Cancelled)

12. (New) The method of claim 1, wherein coding the first measurement signal with a first code includes modulating the first measurement signal with a first frequency and coding the second measurement signal with a second code includes modulating the second measurement signal with a second frequency.

13. (New) The method of claim 1, further comprising balancing the optical path lengths through the unit under test.

14. (New) The method of claim 1, wherein detecting the reflected and transmitted signals is performed by polarization diversity receivers.

15. (New) The method of claim 1, further comprising detecting the reflected and transmitted signals using frequency selective detection.

16. (New) The setup of claim 9, wherein the coding devices code the first measurement signal with a first code by modulating the

first measurement signal with a first frequency and the coding devices code the second measurement signal with a second code by modulating the second measurement signal with a second frequency.

17. (New) The setup of claim 9, further comprising:

a reference arm for deriving a first and second reference signal from the first and second coded measurement signals, respectively; and

first and second couplers for superimposing the first and second reference signals on the reflected and transmitted signals, respectively.

18. (New) The setup of claim 9, further comprising an adjustment element for balancing the optical path lengths through the unit under test.

19. (New) The setup of claim 9, wherein the receiving elements each comprise a polarization diversity receiver.

20. (New) The setup of claim 9, wherein the receiving elements detect the reflected and transmitted signals using frequency selective detection.

21. (New) A method of determining optical properties of a device under test in two directions in transmission and in reflection, comprising:

splitting an initial measurement signal into at least a first and second measurement signal;

coding the first and second measurement signals by modulating the first measurement signal with a first frequency and the second measurement signal with a second frequency;

feeding the first coded measurement signal into the device under test in one direction and the second coded measurement signal in another direction;

receiving a signal including a reflected signal from the device under test in response to the first coded measurement signal and a transmitted signal from the device under test in response to the second coded measurement signal; and

detecting the reflected and transmitted signals using frequency selective detection.